WHAT IS CLAIMED IS:

1. A chemical-vapor deposition method for forming branched carbon nanotubes comprising:

providing a first precursor material comprising a catalyst for catalyzing the formation of a carbon nanotube according to a chemical-vapor deposition process, wherein the catalyst is capable of forming a carbide when reacted with carbon;

providing a second precursor material comprising a dopant, wherein the dopant is capable of forming a carbide when reacted with carbon;

mixing the first and second precursor materials together;

vaporizing the precursor materials;

heating the vaporized mixture of precursor materials to a reaction temperature in a reactor, wherein the carbide-forming reaction of the dopant is more thermodynamically favorable than the carbide-forming reaction of the catalyst at the reactor conditions;

providing a carbon source to the reactor;

vaporizing the carbon source;

heating the vaporized carbon source to the reaction temperature in the reactor; and

forming a carbon nanotube in the reactor according to a chemical-vapor deposition process, wherein the carbon nanotube comprises one or more branches.

2. The process of claim 1, wherein the carbon source is an organic solvent.

3. The process of claim 2, wherein the organic solvent is selected from the group consisting of xylene, ethylene, and benzene.

4. The process of claim 1, wherein the catalyst is iron.

5. The process of claim 1, wherein the first precursor material comprising the catalyst is a mettallocene.

6. The process of claim 1, wherein the dopant is selected from the group consisting of titanium, hafnium, and zirconium.

7. The process of claim 1, wherein the second precursor material comprising the dopant is tetrakis(diethylamino)titanium.

8. The process of claim 1, wherein the catalyst is provided to the reactor at an atomic percentage of less than about 0.75 at.%.

9. The process of claim 1, wherein the catalyst is provided to the reactor at an atomic percentage of between about 0.2 at.% and about 0.7 at.%.

10. The process of claim 1, wherein the dopant is provided to the reactor at an atomic percentage of between about 0.5 at.% and 4 at.%.

11. The process of claim 1, wherein the dopant is provided to the reactor at an atomic percentage of between about 1 at.% and 3.5 at.%.

12. The process of claim 1, wherein one or both of the precursor materials are vaporized at a temperature of less than about 250°C.

13. The process of claim 1, wherein one or both of the precursor materials are vaporized at a temperature of between 125°C and about 175°C.

14. The process of claim 1, wherein the reaction temperature is between about 650°C and about 850°C.

15. The process of claim 1, wherein the carbon source is provided to the reactor subsequent to when the vaporized mixture of precursor materials is heated to the reaction temperature.

16. The process of claim 1, wherein the carbon source is provided to the reactor simultaneous with when the vaporized mixture of precursor materials is heated to the reaction temperature.

17. A chemical-vapor deposition method for forming branched nanotubes comprising:

providing precursor materials comprising a first precursor material comprising an organic solvent, a second precursor material comprising iron, and a third precursor material comprising a dopant, wherein the dopant is capable of forming a carbide when reacted with carbon;

mixing the precursor materials together;

vaporizing the precursor materials;

heating the vaporized precursor materials to a reaction temperature, wherein the carbide-forming reaction of the dopant is more thermodynamically favorable than an iron carbide forming reaction at the reaction temperature; and

forming a carbon nanotube according to a chemical-vapor deposition process, wherein the carbon nanotube comprises one or more branches.

18. The process of claim 17, wherein the organic solvent is selected from the group consisting of xylene, benzene, and ethylene.

19. The process of claim 17, wherein the precursor material comprising iron is ferrocene.

20. The process of claim 17, wherein the dopant is selected from the group consisting of titanium, hafnium, and zirconium.

21. The process of claim 17, wherein iron is provided at an atomic percentage of less than about 0.75 at.%.

22. The process of claim 17, wherein iron is provided at an atomic percentage of between about 0.2 at.% and about 0.7 at.%.

23. The process of claim 17, wherein the dopant is provided at an atomic percentage of between about 0.5 at.% and 4 at.%.

24. The process of claim 17, wherein the mixture of precursor materials is vaporized at a temperature of between 125°C and about 175°C.

25. The process of claim 17, wherein the reaction temperature is between about 650°C and about 850°C.

26. A carbon nanotube comprising one or more branches, the carbon nanotube further comprising a doped nanoparticle affixed to a wall of the nanotube, the doped nanoparticle comprising a first material doped by a second material, wherein both the first material and the second material are capable of forming a carbide when reacted with carbon.

27. The carbon nanotube of claim 26, wherein the first material is iron.

28. The carbon nanotube of claim 27, wherein the second material is selected from the group consisting of titanium, zirconium, and hafnium.

29. The carbon nanotube of claim 26, wherein the doped nanoparticle comprises less than about 5 at.% dopant.

30. The carbon nanotube of claim 26, wherein the nanotube comprises more than one branch emanating from a single branch junction.

31. The carbon nanotube of claim 26, wherein the nanotube comprises at least two branches, each of the two branches emanating from separate branching loci along the length of the nanotube.

32. The carbon nanotube of claim 26, wherein the carbon nanotube is a Y-junction nanotube.

33. The carbon nanotube of claim 26, wherein the carbon nanotube is a V-junction nanotube.